CLAIMS

1. A support structure for a flowing-water driveable turbine system, characterised in that a turbine, or a plurality of turbine assemblies (3), is/are mounted in a column of flowing water for operational co-operation with the flow of water on a deck or platform (1) of streamlined cross-section that is located at an elevated position with respect to the bed (SB) of the flowing water, the deck or platform being aligned horizontally in such a manner that is aligned horizontally with the current so as to minimise its resistance to the water flow.

2. A support structure for a flowing-water driveable turbine system, characterised in that a turbine, or a plurality of turbine assemblies (3) is/are mounted for operational co-operation with a flow of water on a deck or platform (1) of streamlined cross-section in such a manner that the turbine assemblie(s) (3) is/are deployed laterally (i.e. normal to the direction of flow DW) across the current and wherein the platform is aligned horizontally with the current so as to minimise its resistance to the water flow.

3. A support structure as claimed in claim 1 or 3, and characterised in that the platform or deck (1) is of a rectangular planform.

4. A support structure as claimed in claim 1,2 or 3, and characterised in that the deck or platform (1) carrying the turbines is either supported in the elevated position by at least two supporting legs or struts (2) upstanding from the bed of said flowing water.

5. A support structure as claimed in claim 1,2 or 3, and characterised in that the deck or platform (1) is buoyant and held down in the water column by tensioned cables, ropes or ties (5) anchored to the bed, to be at said elevated location.

6. A support structure as claimed in claim 1,2 or 3, and characterised in that means are provided for enabling the deck or platform (1) to be displaced between its operation location and a second location adjacent to the (WL) of the water whereby the turbine or turbines (3) associated with the deck or platform (1) can at least reach the surface of the water whereby the turbines assemblies (3) may be accessed for maintenance or repairs using surface vessels.

7. A support structure as claimed in claim 1, 2, 3 or 4, and characterised by including at least one further deck or platform (10) of streamlined cross-section arranged in "biplane" or "triplane" form, the arrangement being such as to improve the structural integrity of the support structure.

8. A support structure as claimed in claim 7, and characterised in that the additional deck(s) or platform(s) (10) are arranged to provide surfaces parallel to the surface of the first mentioned deck or platform (1) either at the level of the axes of the associated turbine or turbines (3) associated with the first mentioned deck or platform (1), above the level of the said axes. or a combination of at and above the level of the said axes.

9 A support structure as claimed in claim 8, and characterised in that said additional surfaces (100 are of the same size, smaller or larger in chord and in thickness than the first mentioned supporting surface (1)

10. A support structure as claimed in any one of the preceding claims, and characterised in that the first mentioned deck or platform of streamlined cross-section (1) has an asymmetrical streamlined cross section in which there is greater convexity on one surface compared with the other to the extent that upper and lower surfaces are be convex, with one more so than the other.

11. A support structure as claimed in any one of the preceding claims, and characterised in that the first mentioned deck or platform (1) of streamlined cross-section has an asymmetrical streamlined cross section in which there is greater convexity on one surface compared with the other to the extent that one surface is convex and the other surface is either substantially flat or concave the arrangement being such as to accelerate the flow over the more convex surface in such manner as to reduce velocity shear through the rotor.

12. A support structure as claimed in any one of the preceding claims 1 to 10, and characterised in that the first mentioned deck or platform (1) of streamlined cross-section has an asymmetrical streamlined cross section in which there is greater convexity on one surface compared with the other to the extent that one surface is convex and the other surface is either substantially flat or concave, the arrangement being such that when the deck or platform (1) is mounted to supports (2) and the more convex side is downwards facing flow of water across the deck or platform will cause a down thrust as a result of lift forces generated which will act in such manner as to help to seat the platform more securely on its supports. and in that when the more convex surface is upwards facing flow of water there across the deck or platform it will create an up thrust as a result of lift forces which can help maintain the tension and stability in a tension leg buoyant fixing arrangement (5).

13. A support structure as claimed in any one of the preceding claims 1 to 3, and characterised in that the first mentioned deck or platform (1) of streamlined cross-section has an asymmetrical streamlined cross section in which there is greater convexity on one surface compared with the other to the extent that one surface is convex and the other surface is either substantially flat or concave, the arrangement being such that when deck or platform is held down in the water column by tensioned cables, ropes or ties (5) anchored to the bed (SB) to be at said elevated location and the more convex surface is upwards facing flow of

water there across the deck or platform it will create an up thrust as a result of lift forces which can help maintain the tension and stability in a tension leg buoyant fixing arrangement (5).

14 A support structure as claimed in any one of the preceding claims 1 to 14, and characterised in that the first mentioned deck or platform (1) of streamlined cross-section has an upper surface more convex than its lower surface, in order to accelerate the water flow through the row of turbines, the space below the rectangular deck or platform of streamlined cross-section is substantially blocked by an obstruction (XX) the arrangement being such that the deck or platform will cause most of the water flow relative to the deck or platform to rise and accelerate over its convex upper surface and through the rotors of the turbine assemblies (3) and to enable a small proportion of the flow to be bled through a narrow slot (12) between the lower surface of the rectangular planformed deck or platform (1) of streamlined cross-section and the top of the aforementioned obstruction (XX) in order to prevent the turbulent boundary layer being deflected over the top of the rectangular planformed deck or platform (1) of streamlined cross-section, the arrangement being such that a significant increase in the mean water flow velocity through the turbine rotors is obtained thereby thereby improving power output of the turbine assembly(s) (3).